Gerald F. Muething, Jr.

6143 Anchor Lane

Rockledge, FL 32955

Email: rmuething@cfl.rr.com

Comments on RM-11708

Dear Sirs;

My name is Gerald F. (Rick) Muething, Jr. and hold an amateur radio Advanced License call sign KN6KB. I was first licensed in 1962. I have enjoyed and used Amateur digital modes for over 20 years and have designed and programmed several sound card protocols including the SCAMP, WINMOR, V4 and H4 ARQ protocols. I also have continuously operated a station used in an Amateur radio email system for the past 16 years. I am one of the developers of the Winlink 2000 Amateur system and currently operate a continuous HF gateway for that system using Pactor 1,2,3, WINMOR and Robust packet digital protocols.

I have BSEE and MSEE degrees with specialty in computers and communications systems. I am a scientific programmer and understand the implementation of DSP based digital modes. I am quite familiar with rules addressed by RM-11708 (97.305, 97.307) and understand the theory of bandwidth vs. symbol rate for various FSK, PSK, and QAM modulation modes currently in use. I am also very familiar with the unnecessary restrictions the symbol rate rule places on HF modem implementation as it applies to higher baud rate and channel compensation techniques now being used (outside the US) by a number of HF and VHF/UHF amateurs. The existing symbol rate rule has also in my opinion promoted a significant reduction in the motivation and capability of a number of US based companies to compete making amateur radio products over the last 20 years. The primary reason is that with the limitation placed on symbol rates for US amateurs there simply wasn't the economic incentive to spend the money and technical effort to develop amateur-based products and protocols that were not usable in the US Amateur market due to the symbol rate rule.

The changes proposed by the ARRL are a good step in the very much needed modernization of our US amateur rules. The proposed changes suggest adopting a bandwidth segmentation and limitation

independent of mode or modulation type. This I strongly believe is the preferred mechanism. Bandwidth (when specifically described …e.g. 2.8 KHz @ the -26 dB point) is a universal, well understood, and easily measured parameter. It relates the compatibility of radio transmission and radio equipment. Segmentation of the amateur bands by bandwidth (vs. mode, symbol rate etc.) is more easily understood and likely to enjoy a long lifetime in the amateur regulations. It is far superior to those regulations of mode, modulation type, symbol rate (baud) etc. which has proven to become obsolete quickly with the rapid changes in technology we have become accustomed to.

I would also request that in this process the commission consider regulations that permit and encourage the use of other digital mechanisms such as digital voice and image and include these (but not as specific modes or uses) in the new rule. For example recent significant advances in digital voice http://va3paw.com/2012/12/15/free-dv-open-source-digital-voice-codec-for-hf/ and image transmission have shown substantial improvements in both reduction of occupied bandwidth (as compared to SSB voice and Analog FAX) and in improvement in readability and reduction of susceptibility to interference. There should be no distinction (from a rule perspective) in the permissible spectrum for SSB voice vs. Digital voice provided each fits within the 2.8 KHz proposed maximum bandwidth.

The fact that many of these new protocols can be implemented in software with simple PC/Sound card technology or low-cost microprocessor/DSP hardware encourages experimentation and advancement of the amateur art.

Thank you for this opportunity to comment on RM-11708. I can be reached at the above email address for questions or clarifications if needed.

Respectively,

Gerald F. (Rick) Muething, Jr. KN6KB